

PATENT  
 USSN 08/974,584  
 015389-002950US  
 018/206p2

### CLAIM AMENDMENTS

1 to 118. **CANCELLED**

119. *(Currently amended)* An isolated, synthetic, or recombinant polynucleotide encoding a protein that comprises an amino acid sequence at least 60% identical to SEQ. ID NO:118 when the entire sequence of said protein is optimally aligned with SEQ. ID NO:118, and with each of the following structures in the order amino terminus-(f)-(a)-(b)-(c)-(d)-(e)-carboxy terminus shown:

amino terminus:

either: Trp-R<sub>1</sub>-X<sub>7</sub>-R<sub>1</sub>-R<sub>1</sub>-R<sub>2</sub>-X-Phe-Phe-Tyr-X-Thr-Glu-X<sub>6</sub>-R<sub>3</sub>-R<sub>3</sub>-Arg-R<sub>4</sub>-X<sub>2</sub>-Trp

(SEQ. ID NO:16);

or: Trp-R<sub>1</sub>-X<sub>7</sub>-R<sub>1</sub>-R<sub>1</sub>-R<sub>2</sub>-X-Phe-Phe-Tyr-X-Thr-Glu-X<sub>6</sub>-R<sub>3</sub>-R<sub>3</sub>-Arg-R<sub>4</sub>-X<sub>2</sub>-Trp

(SEQ. ID NO:17);

a) X<sub>3</sub>-Arg-X<sub>2</sub>-Pro-Lys-X<sub>3</sub> (SEQ. ID NO:139) ┐

b) X-Arg-X-Ile-X (SEQ. ID NO:143) ┐

c) X<sub>4</sub>-Phe-X<sub>3</sub>-Asp-X<sub>4</sub>-Tyr-Asp-X<sub>2</sub> (SEQ. ID NO:144) ┐

d) Tyr-X<sub>4</sub>-Gly-X<sub>2</sub>-Gln-Gly-X<sub>3</sub>-Ser-X<sub>8</sub> (SEQ. ID NO:146) ┐

e) X<sub>6</sub>-Asp-Asp-X-Leu-X<sub>3</sub> (SEQ. ID NO:147); and

~~f) either: Trp-R<sub>1</sub>-X<sub>7</sub>-R<sub>1</sub>-R<sub>1</sub>-R<sub>2</sub>-X-Phe-Phe-Tyr-X-Thr-Glu-X<sub>6</sub>-R<sub>3</sub>-R<sub>3</sub>-Arg-R<sub>4</sub>-X<sub>2</sub>-Trp~~

~~(SEQ. ID NO:16);~~

~~or: Trp-R<sub>1</sub>-X<sub>7</sub>-R<sub>1</sub>-R<sub>1</sub>-R<sub>2</sub>-X-Phe-Phe-Tyr-X-Thr-Glu-X<sub>6</sub>-R<sub>3</sub>-R<sub>3</sub>-Arg-R<sub>4</sub>-X<sub>2</sub>-Trp~~

~~(SEQ. ID NO:17);~~

carboxy terminus:

with the proviso that said protein is not a mouse telomerase reverse transcriptase protein, characterized as having at least 500 consecutive amino acids encoded by SEQ. ID NO:124;

wherein R<sub>1</sub> is Leu or Ile, R<sub>2</sub> is Gln or Arg, R<sub>3</sub> is Phe or Tyr, R<sub>4</sub> is Lys or His, X represents an unspecified amino acid ┐ and X<sub>n</sub> represents the number n of consecutive unspecified amino acids;

and wherein the protein has telomerase catalytic activity when complexed with a telomerase RNA component.

120 to 126. **CANCELLED**

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127. *(Withdrawn)* A method for increasing proliferative capacity of a cell of a vertebrate species, comprising expressing the polynucleotide of claim 119 in the cell *in vitro*.
128. *(New)* An isolated, synthetic, or recombinant protein according to claim 119, complexed with a telomerase RNA component.
129. *(New)* An isolated, synthetic, or recombinant polynucleotide encoding a protein that comprises an amino acid sequence at least 80% identical to SEQ. ID NO:118 when the entire sequence of said protein is optimally aligned with SEQ. ID NO:118, each of the following structures in the order shown:

amino terminus;

either: Trp-R<sub>1</sub>-X<sub>7</sub>-R<sub>1</sub>-R<sub>1</sub>-R<sub>2</sub>-X-Phe-Phe-Tyr-X-Thr-Glu-X<sub>8</sub>-R<sub>3</sub>-R<sub>3</sub>-Arg-R<sub>4</sub>-X<sub>2</sub>-Trp  
(SEQ. ID NO:16),

or: Trp-R<sub>1</sub>-X<sub>7</sub>-R<sub>1</sub>-R<sub>1</sub>-R<sub>2</sub>-X-Phe-Phe-Tyr-X-Thr-Glu-X<sub>6</sub>-R<sub>3</sub>-R<sub>3</sub>-Arg-R<sub>4</sub>-X<sub>2</sub>-Trp  
(SEQ. ID NO:17);

X<sub>3</sub>-Arg-X<sub>2</sub>-Pro-Lys-X<sub>3</sub> (SEQ. ID NO:139);

X-Arg-X-Ile-X (SEQ. ID NO:143);

X<sub>4</sub>-Phe-X<sub>3</sub>-Asp-X<sub>4</sub>-Tyr-Asp-X<sub>2</sub> (SEQ. ID NO:144);

Tyr-X<sub>4</sub>-Gly-X<sub>2</sub>-Gln-Gly-X<sub>3</sub>-Ser-X<sub>8</sub> (SEQ. ID NO:146);

X<sub>6</sub>-Asp-Asp-X-Leu-X<sub>3</sub> (SEQ. ID NO:147);

carboxy terminus;

wherein R<sub>1</sub> is Leu or Ile, R<sub>2</sub> is Gln or Arg, R<sub>3</sub> is Phe or Tyr, R<sub>4</sub> is Lys or His, X represents an unspecified amino acid, and X<sub>n</sub> represents the number n of consecutive unspecified amino acids;  
and wherein the protein has telomerase catalytic activity when complexed with a telomerase RNA component.

130. *(New)* An isolated, synthetic, or recombinant protein according to claim 129, comprising an amino acid sequence at least 95% identical to SEQ. ID NO:118.
131. *(New) (Withdrawn)* A method for increasing proliferative capacity of a cell of a vertebrate species, comprising genetically altering the cell *in vitro* to express the polynucleotide of claim 129.